

W5YI

America's Oldest Ham Radio Newsletter

REPORT

Up to the minute news from the world of amateur radio, personal computing and emerging electronics. While no guarantee is made, information is from sources we believe to be reliable.

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...and much, much more!**

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Canada Considering Delicensing its Amateur Radio Service!

The January 1998 issue of *The Canadian Amateur*, the journal of RAC, reports that ham radio north of the border could be changing. *Radio Amateurs of Canada* - or RAC - is Canada's national ham radio society.

Industry Canada is the federal telecommunications regulatory agency in Canada ...similar to our FCC. For the past four years, Industry Canada and the RAC had been collaborating on an initiative that would have ultimately turned administration of Canada's Amateur Radio Service over to the RAC.

Within the past 60 days, RAC was informed by Industry Canada that the agency was terminating the joint IC/RAC collaboration on the delegation of the administration of the Amateur Radio Service and had decided to retain its management of the service. RAC believed that allowing it to administer the service would have greatly benefitted Amateur Radio in Canada. The *Amateur Delegation Working Group* (ADWG) is to be dissolved.

The news came as a complete shock to RAC and its officers do not know why the decision to disband the ADWG was made. It appears, however, that the Canadian Government -- like the United States -- is on a cost cutting campaign. One way to save money would be not to issue individual licenses to its radio amateurs. This is confusing since - unlike in the U.S. - Canadian Amateurs pay a licensing fee. Amateur Radio operators in Canada

are stunned.

RAC had contributed thousands of unpaid hours to the project and said it "...will be meeting further with Industry Canada concerning the summary termination and will provide further information to Canadian Radio Amateurs as it becomes available."

Apparently Canada plans -- or at least is thinking about -- major changes to the way it handles Amateur Radio Service licensing. Industry Canada contracted with a commercial research firm to obtain opinions from a small sample of 300 Canadian amateurs concerning ham radio licensing and certification (qualifications).

The sample represents less than 1% of Canada's 45,000 licensed ham operators - only 20% of which belong to RAC. This is about the same percentage of U.S. ham operators belonging to the ARRL. RAC does not believe that the poll could possibly be representative of their Amateur community and feels that the five questions asked in the poll are worded so as to obtain a certain answer.

A transcript of the IC poll wording appeared in the January 1998 *"Canadian Amateur."* It was apparently conducted during early December by telephone. Here is a copy:

Introduction

Hello, my name is and I am calling of behalf

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of Industry Canada regarding licensing procedures of Radio Amateur stations. The Department periodically conducts reviews of its licensing procedures in order to improve the service it provides to its clients.

At present, Industry Canada is exploring the possibility of regulating Radio Amateur operators without the use of Amateur Radio station licenses. Would you be willing to answer one or two questions about radio license procedures? It will only take a minute. (Yes/No)

Question 1

As I mentioned, Industry Canada is exploring the possibility of regulating radio operators without the use of radio station licenses. This essentially means that the Department would not issue Amateur Radio station licenses but would continue with its present Amateur Radio operator certification program and continue to issue call signs.

The Amateur Radio call signs would be issued with Amateur Radio operator certificates [of qualification - apparently similar to our *Certificate of Successful Completion of Examination*, CSCE.]

Although Industry Canada has not worked out all the details of operating this way, we would be interested in knowing what your opinion is on the issue.

To what extent would you be in favor of exempting all Radio Amateurs from the radio station licensing requirements which includes paying license fees?

Please answer on a scale from 1 to 7, where one means that you are not at all in favor of the proposed exemption, the midpoint four means that you are somewhat in favor of the proposed exemption, and seven means that you are extremely in favor of the proposed exemption.

Question 2

If all Radio Amateur stations are exempted from the requirement to be licensed, another mechanism is needed to issue call signs. If this happens, to what extent would you be in favour of Industry Canada issuing call signs with the Amateur Radio operator certificates?

Please rate your answer on a scale from 1 to 7, where one means that you are not in favor of Industry Canada issuing call signs with the Amateur Radio operator certificates, the midpoint four means that you are somewhat in favour of combining call signs and certificates, and seven means that you are extremely in favour of combining call signs and certificates.

Question 3

To what extent would you be in favour of the Depart-

ment continuing its current way to license Radio Amateur stations and charging annual license fees rather than introducing this proposed exemption to Radio Amateur station licenses.

Please rate your answer on a scale from 1 to 7, where one means that you are not at all in favour of the Department continuing to license Radio Amateur stations and charging license fees, the midpoint four means that you are somewhat in favour of the Department continuing to license Radio Amateur stations and charging license fees, and seven means that you are extremely in favour of the Department continuing to license Radio Amateur stations and charging annual license fees.

Question 4

Currently, Radio Amateurs are able to choose a call sign. Are you in favor of the Department continuing to offer a choice of call sign?

Please rate your answer on a scale from 1 to 7, where one means that you are not at all in favour, the midpoint four means that you are somewhat in favour, and seven means that you are extremely in favour.

Question 5

To what extent are you in favor of the Department charging an administrative fee to cover the costs associated with providing a choice of call sign.

Please rate your answer on a scale from 1 to 7, where one means that you are not at all in favour of being charged an administrative fee, the midpoint four means that you are somewhat in favour of being charged an administrative fee, and seven means that you are extremely in favour of being charged an administrative fee.

Industry Canada bulletin to District Offices

In anticipation of receiving questions about the survey from the public, Industry Canada sent the following information bulletin to its District Offices:

1. What is the objective of the survey?

The Department believes that exempting Radio Amateurs from radio station licensing would be of benefit to both the Department and the Amateur community.

2. Is the Department planning to exempt Radio Amateur stations from licensing and if so when would this come into effect?

The Department is only exploring the possibility of exempting and no decision has been made. Radio Amateurs will definitely be required to hold a license for the April 1998 to March 31, 1999 period. Radio Amateurs are being sent their renewal notices during the February 1998 renewal period.

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3. If the Department no longer issues Amateur Radio station licenses, will there be regulation regarding the operation of Radio amateur stations? How will the Radio Amateur service be regulated?

The Radio Amateur band will continue to be regulated through the existing Radiocommunication Act, the Radiocommunication Regulations, and regulations by reference outlined in Radiocommunication Information Circular titled "Standards for the Operation of Radio Stations in the Amateur Radio Service" (RIC-2). The installation and operation of any Radio Amateur station which does not conform to regulations and technical standards would be in contravention of the Radiocommunication Act.

4. Would an exemption from licensing have an effect on the privileges that are granted to Radio Amateurs?

The act of exempting Radio Amateurs from the requirement to hold a radio station license would not change the radio spectrum privileges which the Radio Amateur community enjoys.

5. Would an exemption affect bilateral and reciprocal arrangements?

Prior to proceeding with an exemption of Radio Amateur licensing, the Department would examine reciprocal and bilateral agreements and renegotiate, if necessary.

6. Would certification and the Delegated Examiner program continue?

Yes, certification for the four levels of qualification would continue as would the Delegated Examiner program.

7. How would call signs be issued?

A call sign would be issued with a Radio Amateur operator certificate. A call sign would automatically be issued with the issuance of a certificate with a Basic qualification.

8. How would requests for change of call signs and requests for additional call signs be processed?

We anticipate that call signs would be managed from one central location. It is anticipated that administrative fees would be charged to process a request for change of call sign and any additional call sign requests, however, these details have not yet been worked out.

9. Will the Department continue with the current practices regarding call sign allocation?

The Department will consider the following before proceeding with any changes: call sign by province; Special Event calls; and, two-letter calls (including criteria for a two-letter waiting list). [End of Notice]

A Canadian ham club (*Kitchener-Waterloo Amateur Radio Club*) posted the five questions to their web site and their poll determined that Amateurs were not in favor of delicensing the service (Question 1) and wanted the Department to continue to offer a choice of call signs. (Question 4.) The results of the other three questions were in the mid-point area.

LOW FREQUENCY BAND HEARD 1100 MILES AWAY

The *Radio Society of Great Britain* reports that activity is increasing in Europe on the 136 kHz LF band and a number of UK amateurs now have efficient receiving systems. On the 23rd of December, G4GVC in Leicester, England heard OH1TN (Finland) at the remarkable distance of 1762 km (about 1100 miles).

Five UK stations have now received the extremely slow Morse transmissions from DA0LF. HB9ASB is also transmitting on the band, but has not been heard in the UK yet. The 136 kHz band will be released to UK amateurs shortly, supplementing the existing 73 kHz band.

INTERNATIONAL SPACE STATION CREWS NAMED

NASA recently named the first team members to live and work aboard the International Space Station, and four crew members already hold ham tickets. In addition, several of the crew members are studying for their licenses.

The first crew will consist of American astronaut William M. Shepherd, as the expedition commander. Shepherd is currently studying for his ham ticket. He'll be accompanied by Russian cosmonauts Yuri Gidzenko and Sergei Krikalev, U5MIR. The crew is training for an early 1999 launch and a planned five-month mission aboard the ISS.

The second crew, headed by Russian cosmonaut Yuri Usachev, R3MIR, will include US astronauts Susan Helms, KC7NHZ, and James S. Voss, who's indicated an interest in getting his amateur radio license.

No licensed hams are among the third crew, which will be headed by astronaut Kenneth Bowersox and will include Russian crewmates Vladimir Dezhurov and Mikhail Turin. Bowersox also has said he'd like to get his ham license.

Russian cosmonaut Yuri Onufrienko will head the fourth crew. US astronauts Carl Walz, KC5TIE, and Daniel Bursch will accompany him.

AMSAT-NA's VP of Manned Space, Frank Bauer, KA3HDO, reports that the international team developing the ISS ham radio station is now working hard to incorporate a transportable ham station for ISS, and deliver this equipment to the Johnson Space Center in Houston, Texas for flight certification in June, 1998.

Initially, ISS crews will inhabit the service module, which will include a ham radio antenna, with ham gear scheduled to be delivered aboard the STS-96 shuttle flight. Microsat/repeater payloads are tentatively scheduled to arrive in early 2002, expanding ham radio capability aboard the station.

The Phase 3D Amateur Satellite is now ready for flight after having the required structural modifications completed. It could come as early as May 1998. (Thanks ARRL, NASA, AMSAT, KB1SF, W3XO and KA3HDO)

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CUTTING EDGE TECHNOLOGY

■ **Intel has unveiled a "connected car system" that permits automobile occupants** - by voice-command - to tune the radio, operate the telephone and adjust air conditioning. Other new features including the ability to read e-mail (via a text-to-speech converter), send faxes, surf the Internet, play movies and video games (in the back seat) and to tell people their location and how to get to their destination using the global positioning system (GPS.) It is expected to be available within two years.

■ **It's a digital world! The Consumer Electronics Manufacturers Association just wrapped up its annual Winter CES (Consumer Electronics Show) in Las Vegas.** CEMA said more than \$75.6 billion will be spent in 1998 on consumer electronics. More than 1,700 exhibitors showed their goods to 100,000 buyers and dealers. It is the world's largest technology trade show.

PCS alone will account for \$17.6 billion - a 10% increase. (Home information products: \$34.5 billion, and home entertainment goods: \$20.4 billion.)

CEMA said that the hot products were digital cameras, hand-held computers, DVDs (Digital Versatile Disc) players, TV set-top boxes (that allow Internet access) and (especially) Digital TV and PC/TV devices. (See our special report on pages 7-9.) CEMA forecast that 1.1 digital cameras will be sold in 1998 - up from 700,000 in 1997 and 300,000 the year before. Traditional analog devices took a back seat at the 1998 CES!

FCC Commissioner Susan Ness gave the keynote address at the DTV forum. Other keynote speakers included Barry Diller (CEO of HSN, Inc.), Scott McNealy (CEO of Sun Microsystems), Steve Forbes (CEO Forbes Magazine) and Microsoft's Bill Gates.

Some of the new products included FlatTV (a flat panel television that hangs on the wall like a painting), Sony's new 2.5-inch optical (recordable media) mini disc players, Motorola and Timex debuted their "Beepwear" watch pager... and web phones with 640 x 480 VGA color LCD touchscreens (which you can manipulate with a "pen" stylus.)

EMERGING COMMUNICATIONS

■ **Do Mobile Phones Cause Brain Tumors?** - An Australian cancer specialist has discovered a correlation between the incidence of brain tumors and the increased use of analog cellular phones. Dr. Andrew Davidson, of Fremantle Hospital, in a letter to the Medical Journal of Australia, said data from the Western Australian Cancer Registry showed the incidence of brain tumors per 100,000 was 6.4 for males and 4.0 for females in 1982 when there were no mobile phones in the region, rising to 9.6 for males and 6.5 for females a decade later. Dr. Davidson wants to conduct a study on mobile phone use by brain tumor patients, but repeated requests to their national cellular telephone provider for assistance with the study have gone unanswered. The *National Health and Medical Research Council* is expected to decide on the award of research grants on health effects of electromagnetic energy by next May. (*Associated Press*)

■ **A bio-electromagnetics scientist in the UK plans to file criminal charges** against a local cellular distributor in a test case to establish a breach of consumer protection laws. He wants a warning label placed on cellular telephones. "Mobile telephones are the most radiative appliances we have ever invented apart from the microwave oven and people are putting them by their heads - arguably the most sensitive part of the body."

A New Zealand biophysicist says electromagnetic radiation of the type radiating from cellular phone antennas can pose a health risk. According to scientists, electromagnetic radiation from cellular telephones warms brain tissue. Industry sources say, however, "There is no evidence anywhere in the world that suggests there is any cause for concern."

COMPUTER & HARDWARE

■ **The cable and wireless industry is going interactive! Bill Gates used his Consumer Electronics Show forum speech to push Windows CE®.** He announced that Microsoft and the nation's largest cable operator, TCI, Inc., have reached a deal to put its Windows operat-

ing system software on TCI's new digital set-top boxes.

Sun Microsystems, Inc., will also license its Java programming language to TCI. This will permit software developers to decide on whether they want to write programs in either Windows CE® or Java. "People will pick," Gates said.

■ **Gates spoke about the future of consumer electronics technologies and an emerging world of digital devices** that are beginning to provide consumers with new exciting forms of entertainment and information in their homes, offices, and even in their cars.

He talked about new products that will be powered by the Microsoft Windows CE® operating system - including the Handheld PC, Auto PC and Palm PC. The Windows platform will also power Web-TV® set-top boxes and Digital TV displays. Motorola and Microsoft also announced a strategic agreement to use the Windows CE® platform in a growing line of wireless devices.

INTERNET NEWS

■ **Free web-based advertising-supported e-mail is hot!** And the hottest is apparently "Hotmail." They have more than 9 million e-mailers and are adding 1.5 million a month ...a rate of 60,000 new subscribers a day! Advertising banners (those square boxes at the top of commercial web pages) are becoming very profitable! So profitable, that Microsoft has purchased the company and is folding "Hotmail" subscribers into its Microsoft Network.

■ **MCI (now merged with World Com) and Yahoo are collaborating to launch an online service** to compete with America Online as an Internet Service Provider. The new service - which is expected to debut in March - will be known as "Yahoo Online powered by MCI Internet."

Yahoo said that 50 million surfers will be accessing the web this year for the first time creating a huge residential market. AOL currently has 12.6 million subscribers - about 60 percent of the consumer online business.

The new service will take advantage of Yahoo's top billing as an Internet directory. Some 26 million users each month

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access its search engine. The monthly cost of Yahoo Online was not disclosed, but it is anticipated that it will be competitive with AOL and the Microsoft Network.

■ **Will consumers pay to subscribe to an online periodical** - when most information available on the Internet is free? Microsoft intends to find out. Its *Slate* magazine will soon go to a pay subscription model. They intend to charge \$30 annually. The Wall Street Journal, Business Week, Entertainment Weekly, the Economist and Money magazine also charge a subscription fee now - or will shortly. The Wall Street Journal has 150,000 subscribers - two thirds are non-print subscribers paying \$49 a year.

Microsoft will shut down its *Mungo Park* adventure website on February 6th to focus more on its transaction oriented agencies: *Expedia* (travel), *Carpoint* (automobiles) and *Investor*. Expedia, which is generating more than \$2 million weekly in airline, hotel and travel bookings, has 1 million users. Microsoft is also teaming with American Express to set up a travel agency for corporate users.

■ **It is worth your time/effort to check out <http://www.ultimatetv.com>** UltimateTV is a brand new (and *extremely well done*) Internet website, the content of which is supplied by all of the major TV and cable networks, operators and stations! There are nearly 10,000 links to various TV shows (and stations around the world). And you can search for information about just about anything related to video. A sister-site, (www.ultimatemovies.com) does the same thing for movies. A lot of production "dollars" went into these two sites for sure!

WASHINGTON WHISPERS

■ **Harold Hallikainen is in the process of posting the FCC (Chapter 47 Telecommunications) rules to the Internet.** You can access his website at <http://hallikainen.com/FccRules>. Once you are there, just click on the CFR part and section that you want from a table of contents. The Part 0 (Commission Organization), Part 1 (Practice and Procedure), and Part 2 (Frequency Allocations, Radio Treaty Matters, General Rules and Regulations) are particularly useful.

You can also access and search the Code of Federal Regulations and the Fed-

eral Register at <http://www.gpo.gov>.

■ **Are cell phones distracting?** A long-awaited federal report by the *National Highway Traffic Safety Administration* did not come to any hard conclusions as to whether mobile phones increase auto accidents. They believe that "...technological improvements, better data collection and public education" rather than restricting access to wireless devices is a better way to deal with the matter.

NHTSA said that mobile phones do appear to distract drivers, but "available data is insufficient to estimate the magnitude of the problem" because state and local authorities typically don't note on accident reports whether mobile phone use occurred prior to a crash. As a result, "...it cannot be determined whether a problem requiring action exists," the report said.

The report, posted at NHTSA's Web site, at <http://www.nhtsa.dot.gov>, contrasts with Canadian research results reported in 1997 in the *Journal of the American Medical Association*, which determined that mobile phones were a significant driver distraction. That research led several states to propose laws requiring the use of hands-free devices. (*Wireless Week*)

■ **Network Solutions, Inc., the Virginia company that runs the InterNIC (Internet) registration program** will have competition shortly! The Internet Council of Registrars (CORE) has authorized Emergent Corp. (of San Mateo, CA) to build and operate the Internet Domain Name Shared Registry System. This shared database coordinates registrations from CORE and will lead to the creation and distribution of seven new top-level domain names: arts, .firm, .info, .nom, .rec, .shop, and .web. Once competition gets going, the cost to obtain an Internet name should drop from its current \$50.

AMATEUR RADIO

■ **AMSAT reports that the previously announced Mir crossband frequency experiment** has been abandoned for now because of problems with the amateur radio antenna on the Russian Mir space station. The crossband test was to have started on 01-Dec-97 and lasted three months. It was to have involved a 70-cm uplink to Mir along with a 2-meter down-

link. US astronaut Dave Wolf, KC5VPP, has been on 145.985 MHz FM simplex from Mir, but only sporadically.

■ **Even though the ITU will not be considering new wording at WRC-99 covering the Amateur Service**, here is the proposed draft as worked up by the IARU.

ARTICLE S25 - Amateur Services

Section 1. Amateur Service

S25.1

Administrations shall verify the technical and operational qualifications of any person wishing to operate an amateur station. A person seeking a license to operate an amateur station shall be required to demonstrate a knowledge of the topics specified in ITU-R Recommendation M-XXX.

S25.2

(1) Transmissions between amateur stations of different countries shall be limited to communications incidental to the purposes of the amateur service or of a personal character.

(2) Except with the authority of the relevant administration granted to meet a particular operational need, transmissions between amateur stations shall not be encoded for the purpose of obscuring their meaning.

S25.3

Administrations are urged to take the steps necessary to allow amateur stations to prepare for and meet communication needs in the event of a natural disaster.

S25.4

An administration may, without issuing a license, permit a person who has been granted a license to operate an amateur station by another administration to operate an amateur station while that person is temporarily in its territory, subject to such conditions or restrictions it may impose.

Section II. Amateur-Satellite Service

S25.5

The provisions of Section I of this Article shall apply equally, as appropriate, to the amateur-satellite service.

S25.6

Administrations authorizing space stations in the amateur-satellite service shall ensure that sufficient earth command stations are established before launch to ensure that any harmful interference caused by emissions from a station in the amateur-satellite service can be immediately eliminated.

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THE FCC, ISPs, & ACCESS CHARGES

Are you one of the tens-of-thousands of Internet users that have received a pass-along message from one of your friends urging you to comment in opposition to allowing local telephone companies charging per-minute access charges on ISPs? Well it is inaccurate! That issue has generated so much public interest and mail to the FCC that they sent out a *Fact Sheet* on January 7, 1998 addressing the issue.

In December 1996, the FCC requested public comment on issues relating to the charges that Internet Service Providers (ISPs) and similar companies pay to local telephone companies.

On May 7, 1997, the FCC decided to leave the existing rate structure in place and to not to allow local telephone companies to impose per-minute access charges on ISPs. **That is the end of the story on access charges.** In a nutshell, there is no open comment period in this proceeding and the Commission is NOT requesting comments to <isp@fcc.gov> by February 1998 as many Internet messengers are implying!

The public seems to have confused the Internet access charge issue with an unrelated *Public Notice* issued by the FCC on Jan. 5, 1998 concerning a required report to Congress on universal service which is due April 10th. This report will include the status of Internet services under the Telecommunications Act of 1996.

Background Information

Each long distance telephone call you make includes per-minute fees that your long distance carrier pays to the originating and terminating local telephone companies over whose facilities that call also traveled. Those fees, which are designed to recover the costs to local telephone companies for use of their facilities, are referred to as "access charges."

As part of its Access Reform proceeding, the FCC in Dec. 1996 asked for comment on the treatment of ISPs and other "enhanced service providers" that also use local telephone companies' facilities. Since the access charge system was established in 1983, enhanced service providers have been classified as "end users" rather than "carriers" for purposes of the access charge rules, and therefore they do not pay the per-minute access charges that long-distance companies pay to local telephone companies.

In the *Access Reform Order*, FCC 97-158, adopted on May 7, 1997, the FCC concluded that the existing rate structure for ISPs should remain in place. **In other**

words, the Commission reaffirmed that ISPs are not required to pay interstate access charges.

When it began the *Access Reform* proceeding, the FCC also issued a *Notice of Inquiry* requesting comment on usage of the public switched telephone network by Internet and interstate information service providers. A *Notice of Inquiry* is a request for information that does not involve any specific proposed rules.

The Commission stated in the Access Reform order that it intended to use the *Notice of Inquiry* record to develop a *Notice of Proposed Rulemaking* (NPRM) proposing actions to facilitate the efficient deployment of data networks.

FAQ: Internet Services/Access Charges

Q: Does the FCC regulate the rates charged by Internet Service Providers?

A: No. ISPs are considered "enhanced service providers" under FCC rules. The FCC does not regulate the rates that enhanced service providers charge to their subscribers.

Q: How does the FCC regulate the rates that local telephone companies charge to ISPs?

A: ISPs purchase local phone lines so that customers can call them. Under FCC rules, enhanced service providers ISPs are considered "end users" when they purchase services from local telephone companies. Thus, ISPs pay the same rates as any other business customer, and these rates are set separately in each state. By contrast, long-distance companies are considered "carriers," and they pay FCC regulated interstate access charges.

Q: How are access charges different from the rates ISPs pay now?

A: Today, ISPs typically purchase "business lines" from local phone companies. Business lines usually include a flat monthly charge, and a per-minute charge for making outgoing calls. Because ISPs receive calls from their subscribers rather than making outgoing calls, ISPs generally do not pay any per-minute charges for their lines, which is one reason many ISPs do not charge per-minute rates for Internet access. Access charges, by contrast, include per-minute fees for both outgoing and incoming calls.

Q: Have local phone companies requested authority from the FCC to charge per-minute rates to ISPs?

A: Since 1983, there has been an ongoing debate about whether enhanced service providers should be required to pay access charges, based on the contention

that these companies use local networks in the same manner as long-distance carriers. In June 1996, four local telephone companies (Pacific Bell, Bell Atlantic, US West, and NYNEX) submitted studies to the FCC concluding that the existing rate structure did not reflect the costs imposed on local telephone companies to support Internet access, and that Internet usage was causing congestion in part of the local network. Several local phone companies have asked the FCC for authority to charge interstate access charges to ISPs, although they have not filed a formal *Petition for Rulemaking*.

Q: Is the FCC considering allowing local phone companies to impose access charges on ISPs?

A: The FCC requested public comment in Dec. 1996 on whether ISPs should pay current access charges, and how Internet and interstate information services using local telephone networks should be treated. Again, the Commission concluded on May 7, 1997 that ISPs should not be subject to interstate access charges.

Q: Does the FCC currently have an ongoing proceeding on Internet and interstate information services?

A: The FCC issued a *Notice of Inquiry* (NOI) in Dec. 1996, asking for comment on whether ISPs should be subject to access charges and how to create incentives for companies to make the most efficient use of the telephone network for Internet and other information services. The comment period for the NOI is closed, but the FCC has stated that it plans to issue a *Notice of Proposed Rulemaking* (NPRM) asking for comment on proposals based on the NOI. The NPRM will consider actions other than imposition of per-minute access charges on ISPs.

Q: Is the FCC considering taxes for use of the Internet or online services?

A: No. The debate involves charges levied by local phone companies, not government taxes.

Q: Is this the "FCC modem tax" that has been floating around the Internet in various forms for several years?

A: The "modem tax" referred to a proposal in 1987 to require enhanced service providers to pay interstate access charges, which at that time were significantly higher than they are today. The 1987 proposal was abandoned in 1988. The current Access Reform proceeding is entirely separate.

For more specific questions, see the *Access Reform* page on the FCC Web site at <http://www.fcc.gov/isp.html>.

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SPECIAL REPORT

DIGITAL TELEVISION IS ON THE WAY!

1998 will be known as the year that DTV got going

Two events have taken place since our last newsletter concerning digital television (DTV). First, the FCC has reallocated television Channels 60-69 (the 746-806 MHz band) to other services leaving TV channels 2 through 59 to be used by both analog NTSC and Digital TV (DTV). NTSC stands for National Television Systems Committee - the group which developed the black-and-white and color TV specs.

Public safety services got two 12 MHz bands at 764-776 MHz and 794-806 MHz. This spectrum allocation is the single largest allocation to police, fire and emergency medical services in history. It more than doubles the total spectrum available to public safety agencies. TV channel 16 (482-488 MHz) is allocated to public safety radio in Los Angeles and several other major cities use TV channels 14 to 16 (470 MHz to 488 MHz) for public safety purposes. It is anticipated that these cities will eventually move their public safety operations to the new spectrum.

The remaining 36 MHz at 746-764 MHz and 776-794 MHz were allocated to the fixed, mobile, and broadcasting (existing Low Power TV and TV translator) services. Eventually, LPTV and TV translators will also be relocated to new channels below channel 60. Broadcasters wanted to retain their exclusive use to the spectrum, but it didn't happen. Licenses for the 36 MHz of spectrum will be sold at public auction.

The uses could include new cellular telephone, land mobile, wireless local telephone, wireless cable, video, multimedia or industrial communications services...to name just a few possibilities. White House officials estimate that the sale could generate about \$5 billion for federal coffers. Pres. Clinton has already said he will use the funds to help rebuild the nation's school system.

DTV to encompass 45 channels

The FCC initially proposed that channels 7-51 be used for DTV service, that channels 60-69 be recovered (and auctioned) almost immediately (to be re-used for public safety purposes), and that, in the longer term, channels 2-6 and 52-59 also be reclaimed. Based on concerns from LPTV (low power television) and TV translator (repeater) stations, the Commission decided to include channels 2-6 and 52-59 in the transition plan, and that no additional spectrum should be recovered prior to the end of the transition to DTV service. "If the lower VHF channels 2-6 prove acceptable for DTV use, we will consider retaining these channels for DTV and adjusting the core spectrum to encompass channels 2-46 rather than channels 7-51," FCC said.

Christmas Eve Birth of Digital TV

The Grand Alliance-based digital TV standard was unanimously adopted by the FCC on Christmas eve 1996. The Zenith VSB (vestigial sideband) digital transmission system was adopted as the DTV broadcast standard along with MPEG-2 compression and Dolby AC-3 audio. The aspect (width-to-height) ratio is a wider: 16 to 9 - similar to the dimensions of a movie film screen. (Today's standard TV sets have an aspect ratio of 4 to 3.) It is the biggest change in consumer television broadcasting since the FCC adopted the standard for color in 1953.

Broadcasters (meaning the NAB) and the computer/movie industry (notably Bill Gates and Steven Spielberg) each favor different display formats for DTV which right now are not compatible. PC users want to be able to switch to DTV ...or to pipe the video to their living room set. Some 50 million homes now have a personal computer. Microsoft's Bill Gates believes that "As the world goes digital, the PC will provide an instant platform." The PC/TV will also permit the viewer to participate in a variety of interactive alternatives.

To deal with the controversy, the FCC reached a compromise among the broadcast, computer and consumer electronics industries and agreed to let the marketplace decide on the digital transmission standard that they want. "The agreement lets manufacturers experiment, and ultimately, consumers will vote with their pocketbooks," the FCC said.

The lines between TVs and PCs could merge and disappear -- or one format (either progressive or interlaced scanning) could emerge as dominant. Be aware that your set might be able to receive one format and not the other. So be careful before you cough up \$3000 to \$8,000 or more for a DTV receiver. One Texas Instruments digital set just announced a price of \$14,000 - and that is without the VCR.

The interlaced broadcast format has a head start - an admitted advantage. But I wouldn't be surprised to see the computer industry eventually winning the battle. Computer manufacturers are already beginning to produce PC cards that act as digital TV tuners. And Intel, the world's biggest chipmaker, is rumored to be working on technology that lets PCs and other devices work with any kind of digital TV transmission. So, I am waiting until all the DTV dust settles.

FCC gets the digital ball rolling

On April 21, 1997, the Federal Communications Commission defined the timetable for the conversion from analog to digital television service and adopted a *Table of Allotments* detailing which TV channels broadcasters would use for DTV service. The transition is targeted for completion by the end of the year 2006.

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The FCC voted to let every TV station in the country use a second 6-MHz channel at no cost for broadcasting digital versions of the programming now being distributed in analog format to conventional TV sets. At the time, FCC Chairman Reed Hundt called it "...the single biggest gift of public property to any industry in history." The FCC has valued the digital airwaves at up to \$70 billion. Broadcasters argued that they needed the new digital licenses without cost to keep TV free for the public.

By 2006, all broadcasts will be transmitted in digital form *only*, and all of the 240 million TV sets now in use in the U.S. will be obsolete at that time. Consumers will either have to buy a digital TV set by that time ...or a converter for their existing NTSC television which will cost a few hundred dollars.

The FCC's *Report and Order* indicates the additional TV channel that will be available to each of the nation's 1600 television stations. Using the *FCC TV Engineering Data Base*, the Commission authorized power levels and antenna heights which closely replicated the analog stations current service area. About 100 telecasters have already complained about their DTV assignment -- stating that their digital channel's coverage area is smaller than their analog domain or that there is potential interference on their new channel.

The list of new DTV channels that will be going on the air is too long to print here. The number of TV channels on the air will grow to over 3,000 before downsizing to digital only. Here is sample information for the Dallas/Ft. Worth market:

	---TV Channel---	
City:	NTSC	DTV
Dallas	4	35
Ft. Worth	5	41
Dallas	8	9
Ft. Worth	11	19
Dallas	13	14
Ft. Worth	21	18
Dallas	27	36
Dallas	33	32
Dallas	39	40
Ft. Worth	52	51
Dallas	58	45

Interestingly, KXAS-TV in Dallas said they would air the 1998 opening day game of the Major League baseball season (Texas Rangers vs. the Chicago White Sox, March 31) in HDTV (high definition television) on Channel 40 even though there are no DTV sets available for purchase yet by the public. A chicken-and-egg situation exists: without digital programming, no one will buy a DTV set. So the station will install demonstration HDTV sets at the ball park. The objective is to motivate the public to purchase digital television sets.

At the end of the transition period, TV stations must surrender either their additional or original license to the FCC "for reallocation or reassignment (or both) pursuant to Commission regulation." (A nice way of saying that the old NTSC channel will be sold to the highest bidder!)

Broadcasters must construct their DTV stations and broadcast to their coverage areas according to a schedule. Construction periods expire May 1, 1999 for all network (ABC, CBS, Fox, NBC) affiliated stations in the top ten TV markets, November 1, 1999 for all network-affiliated stations in the top 30 TV markets, May 1, 2002 for all remaining commercial TV stations and May 1, 2003 for all noncommercial TV stations.

The top ten markets -- New York, Los Angeles, Chicago, Philadelphia, San Francisco, Boston, Washington DC, Dallas-Fort Worth, Detroit and Atlanta -- reach 30% of U.S. households. The top 30 markets reach 50%.

The vast majority of U.S. broadcasters expect to have a DTV signal on the air by the year 2002. A survey found that most broadcasters will offer HDTV programming during prime time and multiple standard definition (SDTV) programs during the day.

But can the deadlines be met? Some local and state governments are already fighting construction of new digital transmission towers. The FCC is looking into whether they will preempt local government zoning or establish time limits to act on antenna construction disputes.

Fifty percent simulcast of the video programming on the analog channel will be required in the year 2000. This increases to 75 percent in 2001 and 100 percent by 2002. In 2006, the analog channel is terminated and spectrum returned.

Broadcasters are expected to spend an estimated \$6 billion to convert their stations to the new digital format. Digital transmitters are not cheap! They cost \$500,000 to \$1 million each! Broadcasters estimate that it will cost about \$5 million in total to convert to DTV.

Digital TV technology permits more video and data to be squeezed into their 6-MHz channel space, so viewers also could receive new services. This could include additional standard channels, paging, telephone service ...even Internet access - from stations at little or no additional cost. This slicing-and-dicing is called multicasting.

All high definition (HDTV) programming is digital television (DTV) but not all DTV is HDTV. While it takes the full 6MHz channel to transmit HDTV, four standard definition television (SDTV) channels can fit in the same space. Four separate digital (but analog quality resolution) video programs can be transmitted simultaneously with capacity left over for supplementary text or interactive options.

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Initially, it is expected that digital television might be used to air pay-TV. There is a question as to whether the FCC will require a license fee during the transition period if telecasters charge for DTV services.

HDTV: vivid sound and dazzling, movie-like video

The other event is the emergence of digital TV sets -- another cog in the wheel of progress. From black-and-white TV to color, from vinyl phonograph records to CDs, from video tapes to DVDs (digital video discs), the American consumer has never passed up improved audio and video performance. We have digital satellite video, camcorders, video games and still cameras. In short, the analog communications and consumer entertainment world is all going digital!

Currently, one in every four households buys a TV set each year - that's 25 million TV sets annually. And, according to the Electronic Manufacturers Association, 72% have paid \$2,000 or more. The average life of a TV is eight years so the market is a *potential* 18 million HD-TVs or \$9 billion a year! Conservative market analysis, however, predicts 30% (30 million) of all U.S. households will have digital sets by 2006.

HDTV sets were shown for the first time at the Consumer Electronics Show (CES) which just closed in Las Vegas. Digital television sets -- which will go on sale later this year to the public -- will offer extremely sharp, high-definition television (HDTV) pictures on a new wide-screen monitor along with six-channel digital "CD-quality" audio systems. HDTV images offer twice the resolution of standard NTSC. DTV stations offering HDTV capability will be able to provide home video delivery with the sharpness of 35mm movies.

Broadcasters are not required to beam HDTV, however, only digital pictures that are clearer than today's analog. Many -- perhaps most -- initial digital TV images probably will not be HDTV, but digital televisions will be able to display all grades.

Initially, the new digital programming will be available only via broadcast TV, and not by cable or satellite television. Cable operators already suffer from a shortage of channels and the FCC is not requiring them to carry both the analog and digital channels. The Commission will address the "must carry" issue shortly. On the other hand, HBO said they could be offering HDTV programming as early as this summer.

Digital and High Definition TV Sets

After a decade of discussion and expectation, the time is now here. The 1998 CES marked the commercial debut of High Definition Television. About a dozen major TV manufacturers including Sharp, Thomson (which makes GE and RCA), Mitsubishi, Philips, Sony and Zenith announced plans to bring them to market in time for Christmas 1998 selling when nearly 40 percent

of all TV sets are sold.

All will be large screen or rear-projection. HDTV on a 6-foot screen is spectacular! Las Vegas television stations (KLAS-TV and KLVW-TV) transmitted over-the-air experimental HDTV feeds directly to 90,000 attendees on the CES exhibit floor.

As with most new consumer technologies, the initial sets will be expensive. But prices will drop as demand increases and economies of scale are realized. Historically, the price of consumer electronics products drop 50% within 10 years of introduction.

LAWS REGARDING RECEPTION OF SIGNALS

Although laws and regulations usually are thought of in connection with transmitting stations, there are also many legal restrictions that bear directly on the reception of signals. The *Communications Act of 1934* contains a section that deals specifically with preserving privacy of communications. In general, Section 705 prohibits disclosing and/or using the contents of any message (transmitted by wire or radio) to anyone but the intended recipient, his agent, or others legally entitled to the information. It is unlawful under this section to use traffic monitored for personal or business benefit.

Specifically exempted are amateur and CB radio transmissions, marine and aircraft communications, broadcasts to the public or calls from ships, aircraft, vehicles, or persons in distress. Government, law enforcement, civil defense, business band, public safety (including police and fire) are exempt if the signals are "...readily accessible to the general public."

There is a legal question as to just exactly what this means. Several states believe that since these signals are not broadcast to the public they are not readily accessible. The Federal Communications Commission does not preempt the States from making their own rules about the interception of radio signals (such as police radio and radar) and several states have their own rules on the books.

The *Electronic Communications Privacy Act of 1986* and the *Digital Telephony Act of 1994* makes it a criminal offense to either intercept, disclose or use private wire or radio-based communications - including mobile, cellular, satellite, microwave, cordless phone calls or paging.

As of April 26, 1994, it is also illegal for companies to sell or import scanners which cover or can be easily altered to receive the cellular phone frequencies. The rules define "readily altered by the user" as "installing or clipping the leads of a simple component such as a diode, resistor and/or jumper wire; replacing a plug-in semiconductor chip; or programming a semiconductor chip using special access codes or an external device, such as a personal computer." Scanners must also not

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be capable of converting digital cellular frequencies to analog voice audio.

Use of either radio transmitters, receivers or other electronic devices aboard U.S. registered aircraft is regulated by the Federal Aviation Administration. Only the operator may give permission to use them aboard aircraft. The "operator" is the pilot of a private aircraft. Aboard an airline, the operator is the airline itself ...and not the pilot. In all cases, electronic devices must be turned off during takeoff and landing.

The FCC has recently distributed a *Public Notice* which clarifies that modifications to scanning receivers in order to receive frequencies allocated to the Cellular Radio Service are not permitted under federal law and the Commission's rules.

"The modification of scanners on a substantial scale to receive cellular frequencies will be considered to constitute manufacture of such equipment in violation of Section 302(d) of the Communications Act and FCC Rules. Entities engaged in such activity are cautioned to cease advertising and/or performing any such activity immediately."

"...Willful or repeated violations may be subject to a monetary forfeiture of not more than \$11,000 for each violation or each day of a continuing violation, except that the amount assessed for any continuing violation shall not exceed a total of \$82,500." Congress is also looking into further restrictions on the use of scanners.

Last summer, U. S. Rep. Billy Tauzin (R-La) who is chairman of the House Telecommunications Subcommittee introduced a bill he called the *Wireless Privacy Enhancement Act of 1997*.

HR-2369 legislation would have (2) prohibited the sale of any scanner that could receive any commercial mobile radio service (CMRS) frequency including police, fire and emergency medical service channels and (2) made it illegal to monitor or divulge information gathered over frequencies allocated to CMRS. The bill would have also affected amateur and shortwave general coverage receivers. If enforced literally, scanner listeners would not be able to monitor most of the frequencies below 30 MHz.

Tauzin later said that he meant only to ban any scanner capable of eavesdropping on private mobile phone calls in the Commercial Mobile Radio Service (CMRS) and "...not restrict citizens from listening to non-commercial amateur and public safety transmissions." The bill has now been rewritten to protect wireless telephone calls and paging.

The Commission said that more information may be obtained from their Fact Sheet *"Interception and Divulgence of Radio Communications."* It is also posted to the FCC's Internet web site at [http://www.fcc.gov/Consumer_Info.html]

The fact sheet provides general information regarding the interception of radio communications as governed only by the Communications Act. The FCC said it should not be used as guidance for deciding whether you can engage in any specific activity "...because this information is too general and because there are other statutes -- Federal and State -- that also govern the interception of radio communications and may make an activity unlawful and may subject the violator to severe criminal penalties. For example Sections 2510-2520 of Title 18 U.S.C. makes it a crime to intercept, divulge or use private communications.

Of those statutes that may govern interception of radio communications, the FCC only has the authority to interpret Section 705 of the Communications Act, *"Unauthorized Publication of Communications."* Section 705 of the Communications Act generally does not prohibit the mere interception of radio communications, although mere interception of radio communications may violate other Federal or State statutes.

In other words, if you happen to overhear your neighbor's cordless telephone, you do not violate the Communications Act. Similarly, if you listen to radio transmissions on your scanner, such as emergency service reports, you are not in violation of Section 705. However, a violation of Section 705 would occur if you divulge or publish what you hear or use it for your own or someone else's benefit. An example of using an intercepted call for a beneficial use in violation of Section 705 would be someone listening to accident reports on a police channel and then sending his or her tow truck to the reported accident scene in order to obtain business.

In addition, courts have held that the act of viewing a transmission (such as pay-television signals) that the viewer was not authorized to receive is a "publication" violating Section 705. Section 705 also has special provisions governing the interception of satellite television programming that is being transmitted to cable operators.

The section prohibits the interception of satellite cable programming for private home viewing if the programming is scrambled or is not encrypted, but is sold through a marketing system. In these circumstances, you must obtain authorization from the programming provider in order to legally intercept the transmission.

The FCC also receives many inquiries regarding the interception and recording of telephone conversations. "To the extent these conversations are radio transmissions, there would be no violation of Section 705 if there were no divulgence or beneficial use of the conversation. Again, however, the mere interception of some telephone-related radio transmissions (for example, cellular, cordless and land line conversations) may constitute a criminal violation of other Federal or State statutes," the FCC said.